What is claimed is:

1. A method for affecting thermoacoustic oscillations in a combustion system (6) comprising at least one burner (7) and at least one combustor (8),
   - a gas flow forming in the region of the burner (7) being excited acoustically,
   - modulated injection of fuel being carried out,
   - the acoustic excitation of the gas flow and the modulated injection of the fuel being coordinated in order to affect the same interference frequency of the thermoacoustic oscillations.

2. The method as claimed in claim 1, characterized in that the instantaneous acoustic excitation of the gas flow and the instantaneous modulated injection of the fuel are phase-coupled with the same signal measured in the combustion system and correlating with the thermoacoustic oscillations.

3. The method as claimed in claim 2, characterized
   - in that the measured signal is subjected to a first phase shift and is used to generate a first driver signal, which drives at least one acoustic source (3) to produce the instantaneous acoustic excitation of the gas flow,
   - in that the measured signal is subjected to a second phase shift and is used to generate a second driver signal, which drives at least one control valve (4) to produce the instantaneous modulated injection of the fuel.

4. The method as claimed in claim 3, characterized in that the first phase shift has a value different from that of the second phase shift.

5. The method as claimed in one of claims 1 to 4, characterized in that the acoustic excitation of the gas flow is carried out upstream of the modulated injection of the fuel.

6. The method as claimed in one of claims 1 to 5, characterized in that the modulated injection of the fuel is carried out in a shear layer forming in the gas flow.

7. A device for affecting thermoacoustic oscillations in a combustion system (6) comprising at least one burner (7) and at least one combustor (8),
- in the region of the burner (7) there being arranged at least one acoustic source (3) for producing acoustic excitation of a gas flow forming in the region of the burner (7),
- the burner (7) having at least one fuel supply device (5) with at least one control valve (4) for producing modulated injection of the fuel,
- a control system (2) being provided which drives the at least one acoustic source (3) and the at least one control valve (4) to affect the same interference frequency of the thermoacoustic oscillations.

8. The device as claimed in claim 7, characterized
- in that the control system (2) has a first control path (10) for the acoustic excitation of the gas flow and a second control path (11) for the modulated injection of the fuel,
- in that the same signal correlating with the thermoacoustic oscillations is supplied to both the control paths (10, 11) on the input side and in parallel,
- in that the two control paths (10, 11) in each case contain a time delay element (12, 13) for producing a phase shift,

- in that, on the output side, the first control path (10) conducts a first driver signal to the acoustic source (3),
- in that, on the output side, the second control path (11) conducts a second driver signal to the control valve (4).

9. The device as claimed in claim 8, characterized in that the first time delay element (12) produces a phase shift different from that of the second time delay element (13).

10. The device as claimed in one of claims 7 to 9, characterized in that the at least one acoustic source (3) is arranged upstream of the point at which the modulated injection of the fuel is carried out.